

Applying science to the diseases of poverty



TDR
Dr Robert Ridley

Robert Ridley earned his BA in 1977 and his PhD in 1980 in organic chemistry and biochemistry at Cambridge University in his native country, the United Kingdom. He has held positions at universities in Canada, Malawi and the United Kingdom. In 1992, he became Infectious Diseases Drug Discovery vice director at F. Hoffmann-La Roche Ltd. in Switzerland where he headed malaria and immunology research. From 1998 to 2001 he managed drug discovery research at TDR, the Special Programme for Research and Training in Tropical Diseases, and worked within TDR to promote public-private partnerships. In 1999, he helped to establish the Medicines for Malaria Venture and served as its chief scientific officer until 2001, before returning to TDR as coordinator of product research and development. Ridley was appointed TDR director in 2004.

TDR, the Special Programme for Research and Training in Tropical Diseases, was set up in the mid-1970s to promote research to improve the health of the poor. This year TDR celebrates 30 years of its key decision-making body, the Joint Coordinating Board – one of the first such bodies to represent a balance of donor and disease-endemic countries. This year a new strategy marks a turning point for TDR, which is co-sponsored by the United Nations Children’s Fund, the United Nations Development Programme (UNDP), the World Bank and the World Health Organization (WHO). Dr Robert Ridley explains.

Q: Why was TDR originally set up?

A: TDR was set up in the mid-1970s when WHO, through its Advisory Committee on Health Research and the World Health Assembly (WHA), recognized that science was not being applied enough to infectious diseases of poverty. The idea was to create an organization that had a broad-based governance mechanism beyond WHO, since it would rely on voluntary contributions and would not take contributions from the core needs of WHO. WHO and the WHA recognized that this research had to be done through partnerships. UNDP and the World Bank backed the project and other organizations came on board. TDR’s original goal was to promote research led by people and institutions in countries that are affected by tropical diseases. That model and goal are as valid today as they were.

Q: The concept of “tropical diseases” originates from the medicine practised by 19th century colonial powers to protect themselves in the tropics. Have you considered changing your name?

A: There has been some discussion about the name. Our new strategy refers more to “infectious diseases of poverty”, but if you look at the terms “tropical disease and tropical medicine” they still

cover a field that is generally recognized today. You still have associations and institutes with the name and – at WHO – a department of neglected tropical diseases. The name has other connotations which we should be aware of, but given the recognition of the name and loyalty to TDR, particularly in developing countries, we decided to keep it.

Q: Has the Global Fund to Fight AIDS, Tuberculosis and Malaria drawn donor funds from TDR?

A: The fund is not pulling resources from TDR. The fund finances drug procurement and national strategies. We promote research on how to scale up provision of those drugs in resource poor settings for the implementation of public health programmes and the effective delivery of products. Control and implementation are too often seen as distinct, but in fact they are two sides of the same coin. The best control programmes take account of research from the start and vice versa.

Q: TDR is working with developing countries to protect clinical trials participants. But do the resulting national ethical review committees have the technical competence?

A: There is a common misperception that there isn’t adequate capacity to carry out any research in developing countries and that they are reliant on researchers in developed countries. We need partnership between “north” and “south” but we also need to recognize the ability of developing countries to fully participate and engage, and to initiate things on their own. That way we can avoid the mistakes often made by top-down approaches, whether in research or in development aid. The Strategic Initiative for Developing Capacity in Ethical Review, or SIDCER, was prompted by the need for strong ethical review in countries. Many ethical committees are now starting to submit themselves to systems and standards of accreditation. It is adding to the quality of clinical research. Most success so far has been in WHO’s South-East Asia Region and the Commonwealth of Independent States but there is increasing activity in other regions.

Q: One of the most elusive quests of scientific research has been for a malaria vaccine. Why have so many promising candidates failed and should more money be invested in this area?

A: If you could get a malaria vaccine that could be applied at birth and

give guaranteed protection, you could start to think about eliminating and eradicating malaria. That goal justifies the investment in developing a malaria vaccine. There are very serious technical issues for developing a vaccine against malaria. For example, vaccines against measles work by mimicking a natural immune response. If you get measles and you do not die, you are protected for life. If you get malaria and you do not die, you are not protected from further infection. To develop a vaccine for malaria, you have to make the body do something it does not naturally do. The technical hurdle is great, just as it is for HIV vaccines. There are promising candidates, but a vaccine could be 20, 30 or 40 years away.

Q: TDR supports researchers and scientists from developing countries in their research into diseases that affect those countries, but how can such countries produce useful findings when they lack scientists with skills and technology?

A: This commonly held perception is false. The capacity and brainpower are there to do such research, although in many areas it may not be on the levels of Europe and the USA. However, Brazil, India and Thailand are world class in research because these countries and outside organizations invested money in this area over the last two decades. Research is increasingly being undertaken and driven by scientists and institutions from the countries affected by disease in a way that was not feasible 20 to 30 years ago. This is not training and capacity building – it's capacity utilization.

Q: Is the tropical diseases research agenda being dictated by agencies in countries that are not affected by these diseases?

A: To an extent this is the case, but that is not to say that what is being done is wrong. Many of the diseases that are being researched are well understood and the general direction is often correct, but there are some important areas that are being neglected.

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Q: Your research efforts focus on tuberculosis, which was taken on by TDR in 2000, and malaria, but surely one cannot describe these as neglected?

A: Researchers from the malaria and TB communities would disagree. It's very dangerous to lump diseases together and say that because millions of dollars are going into this disease, then it's covered. There are often critical areas that are omitted. For example, HIV receives billions of dollars of funds, but when

we tried to scale up access to treatment with the 3 by 5 initiative we found that, while programmes had millions of dollars to buy drugs, there was no money to do research on how to deliver them.

Q: Why has TDR become involved in diagnostics for sexually transmitted diseases?

A: It was an entry into an area of diagnostics in which we had not previously been involved. We started with an evaluation of existing diagnostics. Tests were evaluated in countries, and notably syphilis diagnostics were validated and thus qualified to go on to the WHO procurement list, pushing down the prices. As a result, many countries can contemplate eliminating congenital syphilis as a public health problem.

Q: TDR's new strategy for the next 10 years envisages more effective global research efforts by involving countries affected by infectious diseases. Have developing countries not been adequately involved in the past?

A: No, they have not. The strategy is a recognition of what TDR has always done and builds on this. It's important to realize that this is more than a philosophical discussion about engaging scientists and institutions in countries where the diseases we are looking at are endemic. It is a concerted effort to make sure that the appropriate scientific decisions are made for and by disease-endemic countries.

Q: WHO plans to launch a new list of essential medicines for children. How is TDR promoting research into medi-

cines for tropical diseases formulated for children?

A: From a TDR perspective, it's not just an issue of whether medicines for children are developed but, also, how to ensure that children receive the appropriate treatment with these medicines. When Coartem (artemether–lumefantrine) was developed, we promoted research into its safe use with children. This work is now the basis of Novartis's work with the Medicines for Malaria Venture to develop a paediatric formulation, which is technically demanding.

Q: WHO started a process last year to come up with a global plan to improve access to drugs, diagnostics and vaccines, following the 2006 report by the Commission on Intellectual Property Rights, Innovation and Public Health. Will this process led by the Intergovernmental Working Group result in a plan that will really improve the generation of new products for neglected diseases and access to them in developing countries?

A: I would not like to pre-judge the outcome of this process, but we are starting to see a more holistic approach to the issue. Developing countries have become much more engaged in a discussion which has become increasingly sophisticated over the last 10 years. There is an increasing recognition that making products accessible is an important part of the research agenda for neglected diseases, but we still need to maintain and enhance innovation.

Q: What would you describe as TDR's single greatest achievement?

A: It's difficult to single out just one. TDR has done much to facilitate the development of ivermectin and its implementation in the onchocerciasis programme, and to facilitate research that led to the elimination of leprosy. TDR's research on malaria led to the validation of ACT [artemisinin combination therapy] and bednets. However, if I had to name just one it would be TDR's promotion of the concept and practice of strengthening research capacity. Institutions such as Mahidol in Thailand and Fiocruz [the Oswaldo Cruz Foundation] in Brazil are examples of world-class research institutions that have benefited from our support and international recognition. ■